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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/500,369

06/28/2004

Masa-aki Sato

70456-041

7617

7590 03/21/2008
Mc Dermott Will & Emery
600 13th Street NW
Washington, DC 20005-3096

EXAMINER

SHAHRESTANI, NASIR

ART UNIT	PAPER NUMBER
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3737

MAIL DATE	DELIVERY MODE
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03/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/500,369	Applicant(s) SATO, MASA-AKI	
	Examiner NASIR SHAHRESTANI	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/28/2004; 10/09/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is responsive to Applicant's communication filed 6/28/2004.

Claims 1-20 are pending.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed language is directed towards a method and apparatus that does not result in a concrete nor tangible result. In further detail, claims 6-9 and 16-19 are non-statutory because they recite a mathematical algorithm / computer program per se without a required practical application (no physical transformation and no useful, concrete and tangible result).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tucker (U.S. 2003/0093005 A1) in view of Baillet et al. (NPL – "A Bayesian Approach to Introducing Anatomic-Functional Priors in the EEG/MEG Inverse Problem").

Tucker teaches a method for neural current imaging comprising the steps of measuring an electromagnetic field observed outside a scalp (abstract) and setting in the brain a plurality of curved surfaces having depths from brain surface different from each other and shapes not intersecting with each other (fig. 3), indicating probability contours for the location of sources of neural current activity therein (par. 0036).

Tucker further teaches a plurality of sensors functioning to sense respective voltages providing a map of potential as a function of location on the body surface (par. 0044).

Tucker further teaches identifying a virtual curved surface at which relative minimums are attained among a plurality of virtual curved surfaces as a true curved surface on which a current source exists (see par. 0045 - "The computer then calculates the potential that would result at the surface of the body model with the given sources and this result is compared to the actual, measured potential function on the body 10. Where there is disagreement, the sources are iteratively moved and/or their characteristics are adjusted to reduce the error to an acceptable level").

Tucker further teaches the use of Bayesian statistics to estimate probabilities resulting in source area contours (par. 0060)

Tucker does not specifically teach the particulars of estimating on each of said virtual curved surfaces, a current distribution for recovering said observed electromagnetic field.

Baillet et al. teach a Bayesian formulation yielding a maximum posteriori estimator of dipole activity (pg. 376-377 section A, pg. 377-378 section B).

It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Tucker and to have incorporated the teaching of Baillet et al. and to have provided

for specific determining of posterior probability by Bayesian estimation to provide for enhanced locating of the current sources.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NASIR SHAHRESTANI whose telephone number is (571)270-1031. The examiner can normally be reached on Mon.-Thurs: 7:30-5:00, 2nd Friday: 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian L Casler/
Supervisory Patent Examiner, Art Unit
3737

/N. S./
Examiner, Art Unit 3737*